

## A NEW SPECIES OF *HANSENIELLA* (SYMPHYLA: SCUTIGERELLIDAE) FROM THE INTERIOR HIGHLANDS OF ARKANSAS<sup>1</sup>

Robert T. Allen<sup>2</sup>

**ABSTRACT:** *Hanseniella ouachiticha*, new species, is described from Rich Mountain in western Arkansas. The new species is most closely related to *H. vandykei* from California. A key to the three known North American species is given.

Edwards (1990) has pointed out that Symphyla are "extremely common inhabitants of soil in all parts of the world." but that "the scientific literature on the group is not voluminous." Both statements are certainly true of this class of arthropods in North America. Edwards (1990) in discussing the morphology and ecology of the Symphyla also rendered a valuable service to those wishing to work with this group by providing keys to the two North American families and the North American genera recognized in each family. The genus *Hanseniella* Bagnall belongs to the family Scutigerellidae. This paper describes a new species and presents a key to the three North American species of *Hanseniella*.

The symphylid genus *Hanseniella* occurs on all the continents except Antarctica. The genus is most diverse in tropical areas. Only two species, *H. californica* Hilton (1931) and *H. vandykei* Michelbacher (1939), are known from North America, both species recorded only from California. This paper describes a new species from the Ouachita Mountains of western Arkansas.

<sup>1</sup> Received January 22, 1991. Accepted September 3, 1991.

<sup>2</sup> Department of Entomology and Applied Ecology, University of Delaware, Newark, DE. 19717-1303.

**Key to the North American Species of *Hanseniella***

- 1. Tarsal claws unequal (Fig. 21), one claw much longer than the other ..... 2  
 Tarsal claws equal ..... *californica* Hilton
- 2. Proximal segment of first pair of legs with one long prominent seta; 21-26 antennal segments; central rod of head continued anteriorly ..... *vandykei* Michelbacher
- Proximal segment of first pair of legs with three prominent setae (Fig. 24); 16-25 antennal segments, usually 19, 20, 21; central rod of head not continued anteriorly (Fig. 1) ..... *ouachiticha* new species

***Hanseniella ouachiticha*, new species**

**Holotype:** Arkansas, Polk County, Rich Mountain, Eagleton Overlook, 17 February 1988, extracted with Berlese funnel, Robert T. Allen, collector. Slide-mounted in CMC medium, deposited in the American Museum of Natural History, New York (AMNH).

**Paratypes.** 79 slide-mounted (CMC medium) specimens, same data as the holotype; 10 specimens, University of Arkansas Arthropod Collection (UAAC); 5 specimens United States National Museum (USNM); 5 specimens AMNH; 59 specimens, Robert T. Allen Collection (RTAC).

**Etymology.** This species is named after the Ouachita Mountains, a major subsegment of the Interior Highlands.

**Length.** 2.5-3.0 mm (apex of head to apex of last abdominal segment).

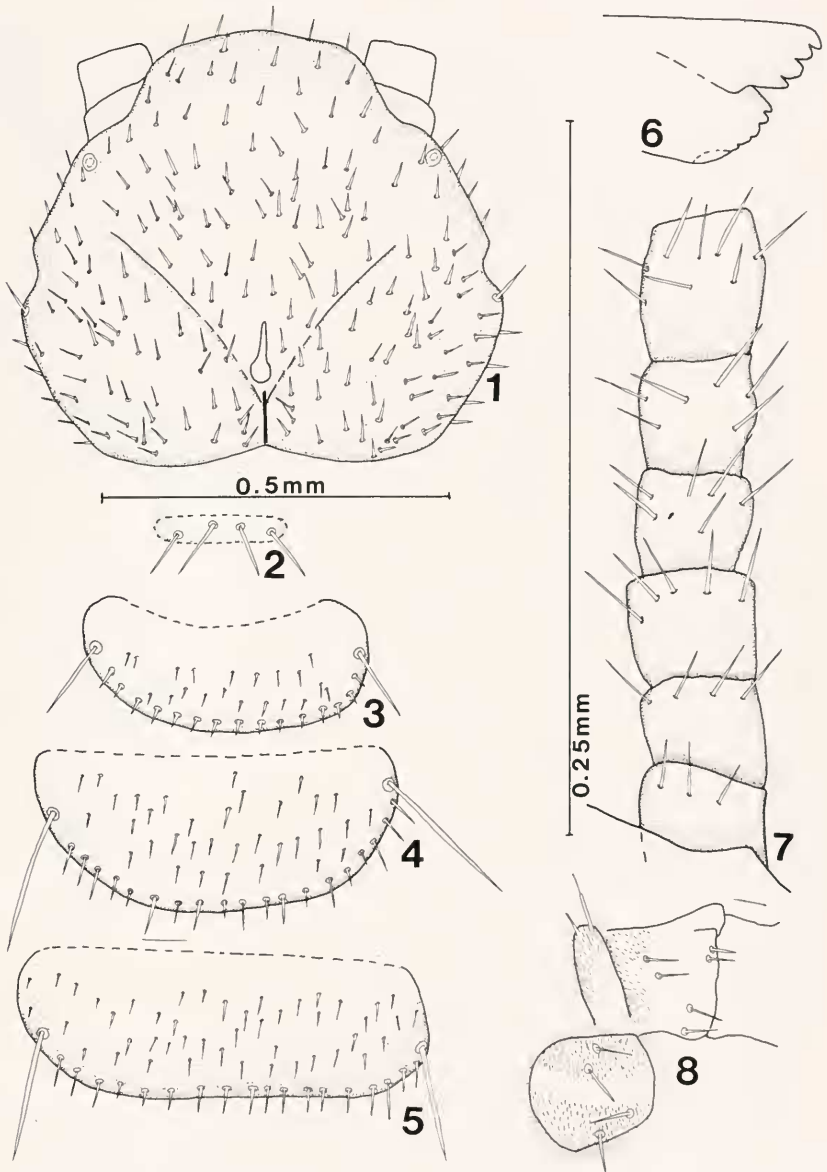
**Head (Fig. 1).** General: slightly wider than long, setae present over the entire surface, all about the same length and size, except for the setae along the posterior margins of the scuta. Central rod: weakly developed posteriorly, not evident in all specimens; lateral branches sometimes evident, extending toward the postantennal organs. Mandibles (Fig. 6): visible in most specimens; the mandible is a large endite apparently composed of two parts, the outer lobe bearing four distinct teeth, the inner lobe with a number of indentations not as deep or distinct as those in the outer lobe. Postantennal organ; small, not evident in all specimens.

**Antennae.** (Figs. 7,14) Number of segments variable ranging from 16-25, but most commonly 19, 20, 21; segments 1-3 usually with one whorl of setae; two whorls on segments 4-10, sometimes on 3 as well; other segments with three whorls, starting with segment 11; terminal segment with the usual three-stalked "sensory" structure; other segments without evident sensory organs.

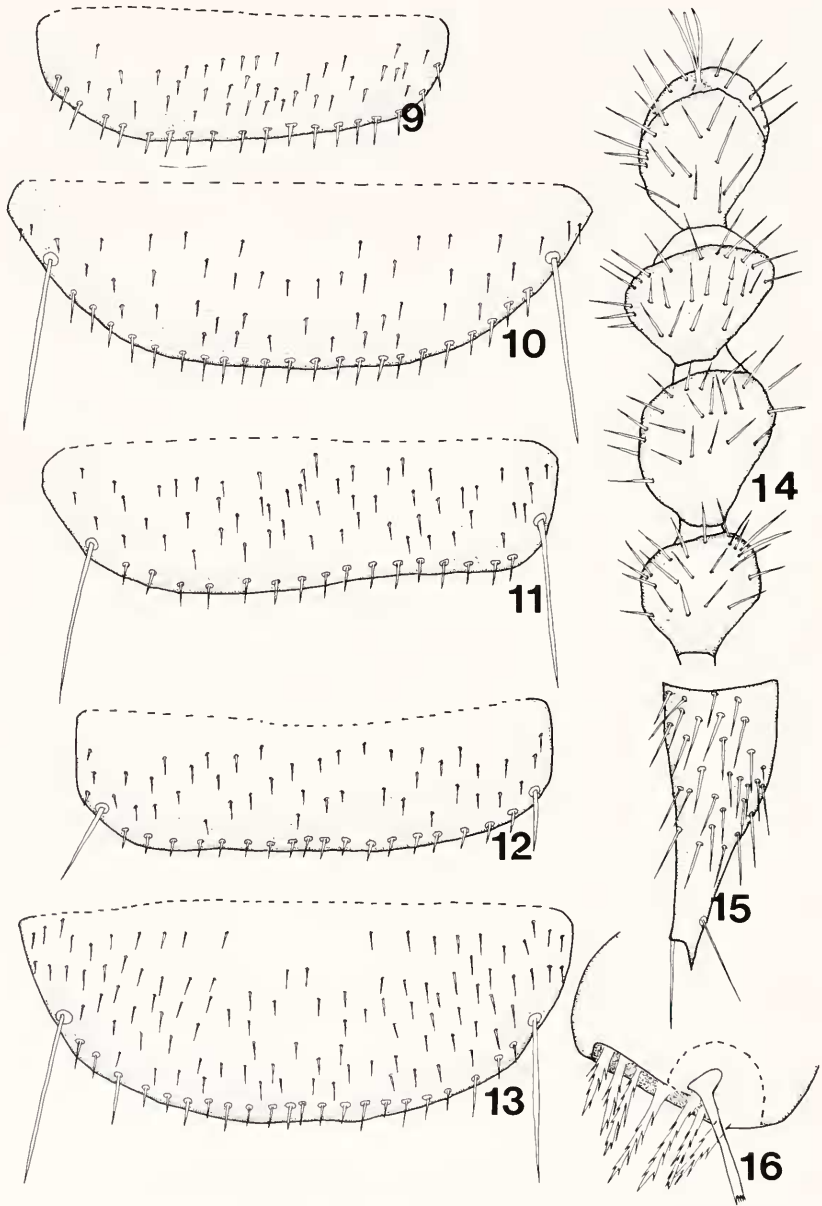
**Scuta.** (Figs. 2-5 9-13, 17-20) Posterior margins of scuta straight or only weakly concave.

The following "table" enumerates the number of setae found along the posterior margin of Scuta I-XIV. The Short Setae are those between the Long Lateral Setae or all the posterior on Scuta V, VII, and XI.

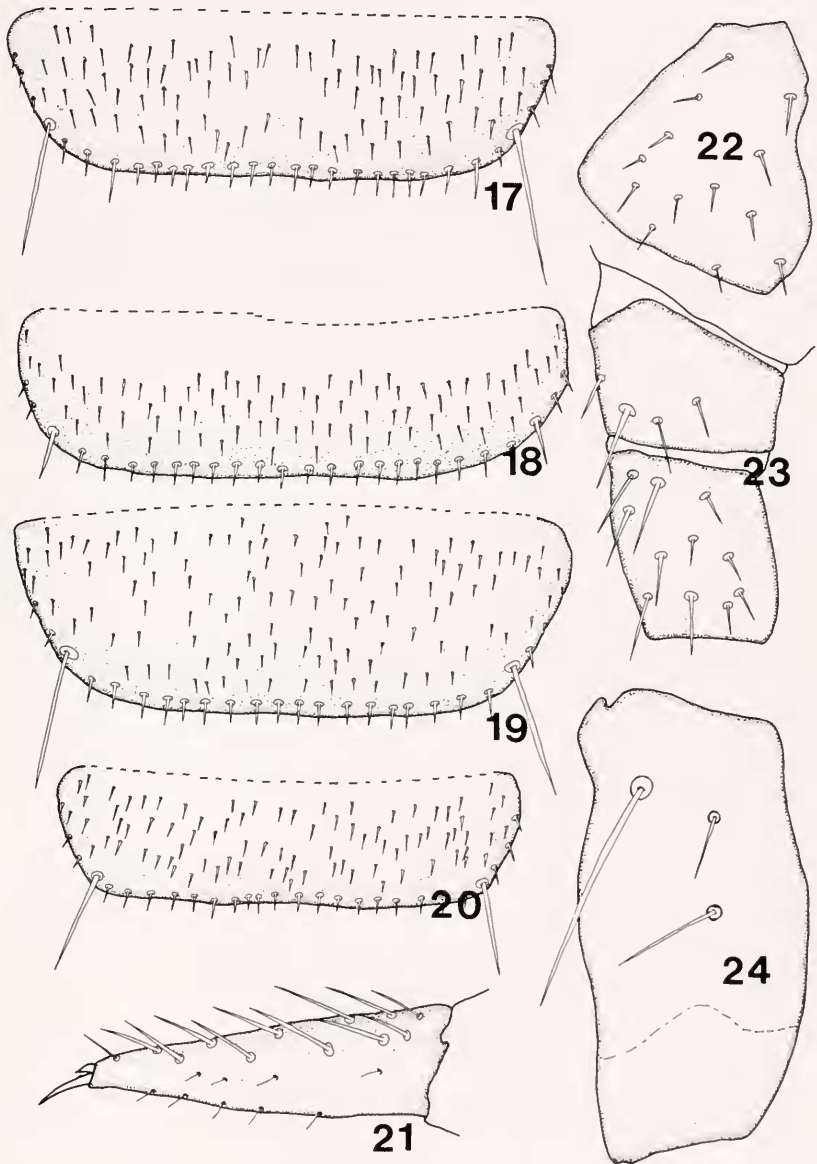
Scuta No.	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
Lateral Long Setae	4	2	2	2	0	2	2	0	2	2	0	2	2	2
Short Setae	0	13-16	16-20	14-22	18-23	19-25	18-23	17-24	17-23	18-22	16-14	15-20	11-19	10-19



Figures 1-8. *Hanseniella ouachitcha*: 1, head; 2-5, scuta 1 to 4 respectively; 6, mandible; 7, antennal segments 1-6; 8, stylus, coxal sac and coxa of leg 10.



Figures 9-16. *Hanseniella ouachiticha*. 9-13, scuta 5 to 9 respectively; 14, distal four antennal segments; 15, spinneret; 16, trichobothrium vesicle.



Figures 17-25. *Hanseniella ouachiticha*. 17-20, scuta 10 to 13 respectively; 24, tarsus and claws of leg 10; 22, coxa of leg 10; 23, femur and tibia of leg 10; 24, proximal segment of leg 1 showing 3 prominent setae.

Legs. Leg segments clothed with a dense covering of small pilose hairs. First pair: half the length of the second pair of legs; proximal segment with three distinct prominent setae on the anterior surface, distal segment with two rows of three prominent setae each on the anterior surface. Leg pairs 2-9; tarsi with two rows of 3-5 prominent setae (Fig. 21); tibiae, femora, and trochanters with a variable number of prominent setae. Leg pair 10 (Fig. 23): tarsi with two rows of 4 prominent setae, sometimes also with 2-3 additional setae near these rows; tibia and femora with a variable number of prominent setae. Claws: (Fig. 21) unequal, one claw half or less than half the length of the other on all legs.

Styli. (Fig. 8) Well developed, present at the base of leg pairs 3-11.

Coxal Sacs (Eversible vesicles) (Fig. 8). Distinct, present at the base of leg pairs 2-11; the sac appears to be composed of two "sclerotized" areas, each with 2-3 prominent setae.

Trichobothria (Fig. 16). Setae almost as long as the spinneret; ventral margin of trichobothrium vesicle with 7-8 prominent setae in the proximal 1/2-3/4; distal 1/4 with only one long prominent setae towards the apex. Inner apical margin with a seta 1/2 as long as body of the spinneret; outer apical margin produced into an acute spine-like process.

## DISCUSSION

*Hanseniella ouachiticha* appears to be most closely related to *H. vandykei*. The new species differs from *H. vandykei* by the characters given in the key, i. e. a fewer number of antennal segments, proximal segment of first pair of legs with three prominent setae rather than one, and the very short central rod of the head. In addition the proximal leg segment of the first pair of legs is elongate in *H. ouachiticha* and short, almost square, in *H. vandykei*.

The type locality for the new species is on Rich Mountain, the highest feature (about 2,750 feet) in the Ouachita Mountains. All the specimens were found in a single Berlese sample taken from rotting logs and at the base of rotting stumps. This mountain is also the type locality for two species of endemic earth worms, a freshwater amphipod, and the Rich Mountain salamander.

## LITERATURE CITED

- Edwards, C. A. 1959. Keys to the genera of the Symphyla. Journ. Linn. Soc. Zool. 44:164-169
- Edwards, C. A. 1990. Symphyla. Chapter 28. in Soil Biology Guide, ed. D. L. Dindal, John Wiles & Sons, New York.
- Hilton, W. A. 1931. Symphyla from North America. Ann. Entomol. Soc. Amer. 24:537-553.
- Michelbacher, A. E. 1939. Further notes on Symphyla with descriptions of three new species from California. Ann. Entomol. Soc. Amer. 32:747-757.